

Inventors: Vachris, et al.
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Amendments to the Claims:

1. to 63. (Previously Canceled)

Please amend claims 64 to 81 and add new claims 97 to 111 as follows:

1 64. (Currently amended) A system for generating an image of relief object
2 comprising:
3 an electroluminescent device coupled to an electrode;
4 a variable resistive layer adjacent to one surface of said electroluminescent
5 device, said variable resistive layer being comprised of conductive particles dispersed
6 through a non-conductive medium, wherein said conducting particles are smaller than
7 the resolution element desired for image;
8 a flexible electrode substantially covering a surface of said variable
9 resistive layer;
10 an electrical current source, said electrical current source having one lead
11 coupled to said electrode of said electroluminescent device and a second lead for
12 coupling to said flexible electrode so that current coupled from said current
13 source to said flexible electrode is strongly coupled through a low
14 resistance path through said variable resistive layer to said electroluminescent device by
15 ridges of said relief object and weakly coupled through a high resistance path through
16 said variable resistive layer to said electroluminescent device by valleys of said relief
17 object whereby more intense light is generated by areas of said electroluminescent
18 device strongly coupled to said current from said ridges of said relief object and less
19 intense light is generated by areas of said electroluminescent device weakly coupled to
20 said current from valleys of said relief object to form an image of the relief object; and
21 wherein said image is a detailed image of a finger print that could be used for

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22 identification.

23

1 2 65. (Previously presented) The system of Claim 64, wherein said
2 electroluminescent device is an organic electroluminescent device.

1 9 66. (Previously presented) The system of Claim 64, wherein said
2 electroluminescent device is an inorganic electroluminescent device.

1 11 67. (Previously presented) The system of Claim 64, further comprising:
2 a sensor array; and
3 optical elements interposed between said sensor array and said electroluminescent
4 device, said optical elements for focusing said generated light on said sensor array.

1 13 68. (Previously presented) The system of Claim 64, further comprising:
2 a one-to-one sensor array located proximate said electroluminescent device so
3 that said generated light is sensed by said one-to-one sensor array.

1 12 69. (Previously presented) The system of Claim 67, wherein said sensor array is
2 an integrated circuit.

14 13 70. (Previously presented) The system of Claim 68, wherein said one-to-one
sensor array is amorphous silicon on glass.

Examiner's Amendment

1 67. (Previously presented) The system of Claim 64, further comprising:
2 a sensor array; and
3 optical elements interposed between said sensor array and said electroluminescent
4 device, said optical elements for focusing said generated light on said sensor array.

1 68. (Previously presented) The system of Claim 64, further comprising:
2 a one-to-one sensor array located proximate said electroluminescent device so
3 that said generated light is sensed by said one-to-one sensor array.

1 69. (Previously presented) The system of Claim 67, wherein said sensor array is
2 an integrated circuit.

1 70. (Previously presented) The system of Claim 68, wherein said one-to-one
2 sensor array is amorphous silicon on glass.

1 10 71. (Previously presented) The system of Claim 66, said inorganic
2 electroluminescent device further comprising:

3 a transparent electrode layer;
4 a dielectric layer;
5 a light emitting layer containing light emitting particles, said light emitting
6 layer being interposed between said transparent electrode and said dielectric layer so
7 that a first surface of said transparent electrode and a first surface of said dielectric
8 layer are proximate said light emitting layer; and
9 said current supply source is an alternating current source.

1 72. (Previously presented) The device of Claim 65, said organic
2 electroluminescent device further comprising:

3 a thin, sublimed molecular film; and
4 said electrode being a transport anode on which said thin, sublimed molecular film
5 is deposited and to which said one lead of said electrical current source is coupled.

1 73. (Previously presented) The device of Claim 72, said thin, sublimed
2 molecular film being tris(8-quinolinolato) aluminum (III).

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1 574. (Previously presented) The device of Claim 65, said organic
2 electroluminescent device further comprising:

3 a light emitting polymer; and

4 said electrode being a transparent anode on which said light emitting polymer is
5 deposited and to which said one lead of said electrical current source is coupled.

1 6 75. (Previously presented) The device of Claim 74, said light emitting polymer
2 being of the group of poly(p-phenylene vinylene), soluble polythiophene derivatives, or
3 polyanilene.

1 7 76. (Previously presented) The devices of Claim 74, said transparent anode
2 being comprised of a transparent base substrate coated with indium tin oxide.

1 8 77. (Previously presented) The device of Claim 74, said current source being a
2 direct current source having one lead coupled to said transparent anode of said organic
3 device and a second lead exposed at a surface of said flexible electrode so that a
4 localized pressure gradient generated by a portion of a relief object contacting said
5 flexible electrode forms a conductive path through said variable resistive layer which
6 corresponds to said localized pressure gradient whereby said current flows from said
7 direct current source and flexible electrode through said variable resistive layer to said
8 transparent anode of said organic electroluminescent device in correspondence with said
9 localized pressure gradient to generate a light image of said relief object.

1 17 78. (Currently amended) A device for generating an image of a relief object
2 comprising:

3 a flexible electrode;

4 a dielectric layer;

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5 a variable resistive layer between said flexible electrode and said dielectric
6 layer, said variable resistive layer being comprised of conductive particles dispersed
7 through a non-conductive medium wherein said conducting particles are smaller than the
8 resolution element desired for image;

9 a second electrode;

10 a light emitting layer being interposed between said dielectric layer and
11 said second electrode, said light emitting layer containing light emitting particles; and

12 an electrical current source having first and second leads, said first lead of
13 said electrical current source being coupled to said second electrode and said second
14 lead of said electrical current source being coupled to said flexible electrode so that a
15 localized pressure gradient generated by a portion of a relief object contacting said
16 flexible electrode forms a conductive path through said variable resistive layer which
17 corresponds to said localized pressure gradient whereby said current flows from said
18 flexible electrode through said variable resistive layer, dielectric layer and light emitting
19 particles to said second electrode in correspondence with said localized pressure gradient
20 to generate a light image of said relief object; and wherein said image is a detailed
21 image of a finger print that could be used for identification.

1 ²⁶₇₉. (Currently amended) A device for generating an image of a relief object
2 comprising:

3 a flexible electrode;

4 a dielectric layer and a light emitting layer in which light emitting particles
5 are dispersed;

6 a variable resistive layer between said flexible electrode and said dielectric
7 layer, said variable resistive layer being comprised of conductive particles dispersed
8 through a non-conductive medium wherein said conducting particles are smaller than the
9 resolution element desired for image;

10 a second electrode; and

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1 an electrical current source having first and second leads, said first lead of said
2 electrical current source being coupled to said second electrode and said second lead of
3 said electrical current source being coupled to said flexible electrode so that a localized
4 pressure gradient generated by portion of a relief object contacting said flexible
5 electrode forms a conductive path through said variable resistive layer which corresponds
6 to said localized pressure gradient whereby said current flows from said flexible
7 electrode through said variable resistive layer, dielectric layer and light emitting
8 particles to said electrode in correspondence with said localized pressure gradient to
9 generate a light image of said relief object and wherein the relief object has valleys and
10 ridges similar in size and structure to a finger and said image is a detailed image of the
11 relief object that could be used for identification.

1 24/80. (Currently amended) A system for generating an image of a relief object
2 comprising:

3 an electroluminescent device having an electrode and configured as an
4 organic electroluminescent device;

5 a variable resistive layer being proximate to said electroluminescent device,
6 said variable resistive layer being comprised of conductive particles dispersed through a
7 non-conductive medium wherein said conductive particles are smaller than the resolution
8 element desired for image;

9 a flexible electrode that substantially covers a surface of said variable
10 resistive layer; and

11 said electrical current source being a direct current source having one lead
12 coupled to said electrode of said organic device and a second lead exposed at a surface
13 of said flexible electrode so that a localized pressure gradient generated by a portion of
14 a relief object contacting said flexible electrode forms a conductive path through said
15 variable resistive layer which corresponds to said localized pressure gradient whereby

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16 said current flows from said direct current source and flexible electrode through which
17 said variable resistive layer to said electrode of said organic electroluminescent device in
18 correspondence with said localized pressure gradient to generate a light image of said
19 relief object and wherein the relief object has valleys and ridges similar in size and
20 structure to a finger and said image is a detailed image of the relief object that could be
21 used for identification.

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1 81. (Currently amended) A method for imaging a relief object comprising the
2 steps of:

3 coupling an electrode of an electroluminescent device to a current source;
4 locating a variable resistive layer adjacent a dielectric layer of said
5 electroluminescent device wherein thickness of said variable resistive layer is smaller
6 than the resolution element desired for image;
7 substantially covering said variable resistive layer with a flexible electrode; and
8 coupling said current source to said flexible electrode so that said contacting step
9 contacts a relief object contacts said flexible electrode so that pressure from ridges and
10 valleys of said relief object generate relatively low and high resistance conductive paths
11 through said variable resistive layer whereby said current from said current source is
12 provided through said variable resistive layer at different magnitudes corresponding to
13 said ridges and valleys of said relief object and said different currents cause said
14 electroluminescent device to generate said image of said relief object;
15 generating a detailed image of the relief object that has ridges and valleys similar
16 to a finger; and
17 using said detailed image for identification.

*Cancels
Ex. amendt.* ~~82-96. (with draw)~~
~~97. (Cancelled).~~

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1 15⁹⁸. (Previously presented) The system of claim 64, wherein said conducting
2 particles vary in size from 50 to 100 micrometers.

16⁹⁹. (Previously presented) The system of claim 64 wherein a thickness of said
variable resistive layer can be from 50 to 100 micrometers.

~~100.~~ (Cancelled).

1 18¹⁰¹. (Previously presented) The device of claim 78, wherein said conducting
2 particles vary in size from 50 to 100 micrometers.

1 19¹⁰². (Previously presented) The device of claim 78 wherein a thickness of said
2 variable resistive layer can be from 50 to 100 micrometer.

1 21¹⁰³. (Previously presented) The device of Claim 79, wherein said conducting
2 particles vary in size from 50 to 100 micrometers.

1 22¹⁰⁴. (Previously presented) The device of Claim 79, wherein said relief object
2 resolution element is a finger.

1 23¹⁰⁵. (Previously presented) The device of Claim 79, wherein a thickness of said
2 variable resistance layer can be from 50 to 100 micrometers.

1 25¹⁰⁶. (Currently amended) The system of Claim 80, wherein said relief object
2 resolution element is a finger.

1 26¹⁰⁷. (Previously presented) The system of Claim 80, wherein said conductive
2 particles vary in size from 50 to 100 micrometers.

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- 27 108. (Previously presented) The system of Claim 80, wherein a thickness of said variable resistance layer can be from 50 to 100 micrometers.

- 28 109. (Currently amended) The method of Claim 81, wherein said relief object resolution element is a finger.

- 29 110. (Previously presented) The method of Claim 81, wherein a thickness of said variable resistive layer can be from 50 to 100 micrometers.

- 30 111. (Previously presented) The method of claim 81, wherein said conducting particles vary in size from 50 to 100 micrometers.